JPRS 79251

20 October 1981

China Report

AGRICULTURE

No. 168

FBIS FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

JPRS 79251

20 October 1981

CHINA REPORT

AGRICULTURE

No. 168

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Success in Procurement of Summer Economic Crops Reported
(ZHONGGUO CAIMAO BAO, 29 Aug 81).............................. 1

Feed Industry Development as Corner Stone of Poultry, Livestock Industry Urged
(Ma Yushan; ZHONGGUO CAIMAO BAO, 27 Aug 81)..................... 3

'JINGJI GUANLI' on Increased Income Distribution
(People's Communes Administrative Bureau of Ministry of Agriculture; JINGJI GUANLI, 15 Aug 81)....................... 6

Briefs
Food Industry Forum 14
Poor Counties' Income 14

Fujian

Briefs
Reservoir Construction 15
Grain Procurement 15

Guangdong

Briefs
Indiscriminate Logging 16

Heilongjiang

Comprehensive Utilization of Timber Promoted
(RENMIN RIBAO, 20 Aug 81).. 17

Briefs
Farm Product Prices 19
Fall Harvest Results 19

Henan

Briefs
Tobacco Transportation 20
Forestry Protection Circular 20
Farm Output 20

Jiangsu

Briefs
Cotton Harvesting 21

Jiangxi

Briefs
Cotton Output 22
Industrial Crops 22

Jilin

Briefs
Seed Selection 23

Nei Monggol

Commune's Implementation of Responsibility System Described
(RENMIN RIBAO, 20 Aug 81).. 24

Shaanxi

Briefs
Cotton Crop Loss 28

Shandong

Briefs
Huimin Prefecture Drought 29

Shanghai

Measures for Gaining Consistently High Late Rice Crop Yields Outlined
(Shanghai Municipal Farm Skills Promotion Station; SHANGHAI NONGYE KEJI, Aug 81).. 30

Zhejiang

Briefs

Taizhou Prefecture Economic Diversification 37
Agricultural Production 37

ABSTRACTS

AGRICULTURE RESEARCH

SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] No 4, 5 Aug 81.. 38

AGRICULTURAL SCIENCE

HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES], No 8, Aug 81......... 40

METEOROLOGY

QIXIANG XUEBAO [ACTA METEOROLOGICA SINICA], No 3, Aug 81............... 41

I. GENERAL INFORMATION

SUCCESS IN PROCUREMENT OF SUMMER ECONOMIC CROPS REPORTED

Beijing ZHONGGUO CAIMAO BAO [CHINA FINANCE AND TRADE JOURNAL] in Chinese 29 Aug 81 p 1

[Article: "Money Value of Agricultural Byproducts Procurement During First Half of Year Amounts to More Than 6.6 Billion Yuan. Procurement Quantities of Mountain Forest Native Produces Drops in Most Areas; Varying Degrees of Increase in Procurement Quantities of Major Economic Crops"]

[Excerpt] According to National Supply and Marketing Cooperative statistics, the quantity of agricultural byproducts procured nationwide during the first half of this year totaled 6.63 billion yuan, an 8.9 percent increase over last year. Nineteen of 28 provinces, municipalities, and autonomous regions (not including Tibet), had a greater quantity of procurement than during the same period last year. In the provinces and autonomous regions of Xinjiang, Henan, Ningxia, Hubei, and Anhui, the increase was greater than 20 percent. In the provinces and autonomous regions of Shandong, Guangxi, Zhejiang, Hunan, and Nei Monggol, the increase was greater than 10 percent.

In terms of varieties, cotton, flue cured tobacco, sun cured tobacco, tea, ramie, citrus fruit, wood fungus, preserved kohlrabi, and raw lacquer, all major economic crops, saw varying degrees of increased procurement. Cotton procurement during the first half of the year amounted to 4.93 million dan, for an all-time high. Flue-cured tobacco procurement amounted to 1,605,000 dan, a 29.3 percent increase over the same period last year. Spring and summer tea procurement amounted to 2,949,000 dar, a 13 percent increase over the same period last year.

As a result of the fairly rapid development of rural collective and household sideline industries, procurement of livestock products for the first half of the year reached 697,230,000 yuan, a 36.4 percent increase over the same period last year. Procurement of sheep wool, sheep skin, goat skin, and rabbit fur amounted to 9.7, 17.6, 8.6, and 59.8 percent respectively over the same period last year.

In minority nationality areas, procurement of agricultural byproducts during the first half of the year was very good. In Xinjiang Province, quantity of procurement for the first half of the year stood at 105 million yuan, a 43 percent increase over the same period last year. Ningxia had a 39 percent increase; Guangxi an 18.2 percent increase; and Nei Monggol a 12.4 percent increase.

In some areas agricultural byproduct procurement plans were not well fulfilled. Of particular note was the continued decline in procurement of mountain forest native products such as the amount of procurement of native products, which saw an 8.7 percent decline during the last half of last year over the same period the year before. During the first half of this year, a further decline of 12.4 percent over the same period last year occurred. Except for individual provinces, procurement quantities in most provinces declined in varying degrees.

Correspondent Tang Youren [3282 2569 0088] has reported that as of 20 August procurement of wheat in the 14 major summer grain producing provinces and municipalities broke 20 billion jin. Procurement of rapeseed in the 15 major summer oil producing provinces and municipalities was almost 5 billion jin, a procurement of 2.66 billion jin more than during the same period last year. The fine quality of the wheat and rapeseed going into storage everywhere is such as has been rarely seen in recent years. This is the overall situation in summer grain and oil procurement this year following nationwide general implementation in rural villages of a system of responsibility for production. It vividly demonstrates that the system of responsibility in agricultural production has not only aroused the enthusiasm of farmers for production of grain and oil, but has also aroused their enthusiasm for sales to the state of grain and oil.

9432
CSO: 4007/6

FEED INDUSTRY DEVELOPMENT AS CORNER STONE OF POULTRY, LIVESTOCK INDUSTRY URGED

Beijing ZHONGGUO CAIMAO BAO [CHINA FINANCE AND TRADE JOURNAL] in Chinese 27 Aug 81 p 2

[Article by Ma Yushan [7456 3768 1472]: "What Policy Should China Follow in Development of Its Livestock Raising Industry?"]

> [Text] Editor's Note: A letter from Comrade Liang Jincai [2733 6930 2088] of the Longmen County Livestock Office in Guangdong Province reports that the current rapid development in rural villages of poultry and livestock feeding industries, mostly by commune member households, very much requires mixed feeds that are fairly high in nutrient value. However, for localities to formulate such feeds, particularly full value mixed feeds, is very difficult, and frequently one area will lack fishmeal, while another will lack bean cake or peanut cake, or else only the greatest efforts will get soybeans, and there will be no certain source of supply of alfalfa. In addition, some vitamins and preservatives are in very short supply. His letter hopes that the state will move quickly to set up in each province and municipality a group of plants to produce full range mixed feeds to meet the needs of rural village large-scale development of poultry and livestock feeding industries, and gradually move toward scientific feeding of livestock, while at the same time changing the current situation whereby large state hog farms and chicken farms depend on the importation of full value mixed feeds.
>
> What program should China follow in developing its livestock feeding industry? Are the views proposed by the letter practical and workable? We have asked Comrade Ma Yushan of the Ministry of Food to give his views on these questions.

With the implementation of rural village economic and political policies and promotion of systems of responsibility for production in the wake of the Third Plenary Session of the 11th Party Central Committee, an unprecedently very good situation has taken place in agricultural production. The poultry and livestock feeding industries have been rapidly revived and developed, and remarkable improvement has taken place in the supply of meat, poultry, and eggs in cities. However, there is no denying that China's poultry and livestock output is still a long way from being able to satisfy domestic consumption and export needs. The diet of China's people still consists principally of grain, and the proportion of poultry and livestock products in it is very small. In terms of average annual per capita consumption of meat and eggs, levels of consumption by the Chinese people is greatly below average world consumption levels. A change in this state of affairs will require unflagging efforts for the gradual building of a modern livestock feed industrial system in China for the production of scientifically formulated, superior quality, quick acting feed in order to create the necessary conditions for the large-scale development of the livestock and poultry feeding industry. Thus a steady increase will take place in the level of poultry and livestock consumption by the Chinese people, effecting, as a result, a gradual fundamental change in the diet of the Chinese people.

Large-scale development of the poultry and livestock raising industry and modernization of production is dependent on development of a modern feed industry. This has been confirmed by the process of development of the poultry and livestock raising industries in some economically advanced countries, and by some experiences of recent years in the development of China's poultry and livestock raising industry. Lacking a modern feed industry, there can be no production of scientifically formulated feeds, particularly of a complete line of full value mixed feeds able to satisfy the across-the-board nutritional needs of all kinds of poultry and livestock, and it is precisely just such quality feeds that constitute the indispensable material foundation for the modernization and factoryization of poultry and livestock raising. Before Liberation, China had no feed industry whatsoever. After Liberation, for various subjective and objective reasons, development of the feed industry has been rather slow. According to Food Ministry statistics as of the end of 1980, mixed feed plants with an annual output of more than 2,000 tons numbered only 137 nationwide, their total annual output capacity being only somewhat more than 1 million tons. Moreover, because of a lack of some needed ingredients, most of these plants were able to produce only a general line of mixed feeds; varieties were few and quality was poor, and far from being able to meet needs for developing the poultry and livestock growing industry. Production of various additives necessary for the formulation of full value mixed feeds, in particular, is still a virtual void in some cases. In order to change this backward state of affairs in China's feed industry, arduous work is required and a fairly long period of time will be required too. However, these problems must now be placed on the important agenda, and firmly taken in hand.

A modern feed industry is a comprehensive industrial system. It requires both production of numerous kinds of additives, and also production of numerous premixed feeds and full value mixed feeds. It touches on the different disciplines of nutrition and health, fermentation, chemical synthesis, medicine, and chemical raw materials of a highly scientific and technical nature and of fairly great difficulty. Furthermore, both raw material and investment requirements are also very great. What policies should China adopt for the development of a modern feed industry that are relatively suited to the country's circumstances, that require little investment, and that bring rapid results?

China has a population of 1 billion, of which 800 million are farmers, yet the poultry and livestock raising industry is run principally by individual commune member households in rural villages. Virtually all of the grain that commune member households engaged in the livestock raising industry require are grown by themselves using feed fields or private plots, augmented by coarse green fodder that they collect. For a long time to come, there will be no change in these circumstances. Therefore, development of China's feed industry must be done in accordance with this reality, and China must take its own path of development. We cannot follow the Japanese experience in operating large feed mixing plants with an annual output of several hundred thousand tons, nor can we follow the American experience of operating principally moderate size feed mixing plants. Inasmuch as China's farmers are themselves able to produce energy feeds (grains) and protein feeds (cake residues), what they lack is the various pre-mixed feeds made up of various additives that are indispensable in mixed feeds. Therefore, the proper course for our development of the feed industry should be: In addition to proper development of some full value feed mixing plants of different sizes by the suburbs of medium size cities and poultry and livestock production bases in accordance with the needs of state and collectively developed poultry and livestock feed farms, emphasis on the development of the feed additive industry and pre-mixed feed industries in order to meet the needs of the farflung rural villages in the development of the poultry and livestock raising industry.

Feed additives are of numerous kinds such as various kinds of vitamins, amino acids, trace elements, and growth promotion agents, all of which are indispensable to the manufacture of full value mixed feeds. With the addition to regular grain feeds of various additives, the transformation rate of feeds can be greatly increased, the feeding period shortened, and various poultry and livestock diseases prevented, thereby increasing the quantity and quality of poultry and livestock products, saving on feed, and reducing production costs.

Pre-mixed feeds are also termed enriched feeds in foreign countries. They are made by formulating scientific amounts of various additives that different kinds of livestock and poultry require for their growth and development. If poultry and livestock raising units (households) will simply mix the pre-mixed feed they buy with their own grain and cake residues in regulated proportions, they will produce full value mixed feeds.

In summary, without planned development of additive production, there is no use talking about modernization of the feed industry. By placing the emphasis of feed production on pre-mixed feeds, it is possible to effectively use the cereal grains and cake residues existing in rural villages, avoid hauling them back and forth, and reducing the cost of feeds and of poultry and livestock products. Therefore, development of this kind of feed industry will be fairly able to meet the situation of dispersed feeding in rural villages, and fairly well guarantee a market for the products.

9432
CSO: 4007/6

'JINGJI GUANLI' ON INCREASED INCOME DISTRIBUTION

HK100535 Beijing JINGJI GUANLI in Chinese No 8, 15 Aug 81 pp 13-16

[Article by People's Communes Administrative Bureau of Ministry of Agriculture: "Three Big Strides in 3 Years, Increased Output with Increased Income--An Investigation into the Continuous Big Increases in Distribution of Income Among Commune Members in Shandong Province"]

[Text] The rural villages of Shandong Province were relatively poor in the past, but during the period of cooperativization the income distribution level of the commune members was not low. In 1956, the average distribution of income among the commune members was 51.9 yuan per person. Compared with the national average at that time of 43.1 yuan per person, it was higher by 8.8 yuan, or 20.4 percent. Since 1958, the "leftist" guiding thought and errors in work have seriously affected the development of agriculture and the improvement of the livelihood of the commune members. It was not until 1976 that the average distribution of income among the commune members reached 57.6 yuan per person. Compared with the 1956 figure, the aggregate increase over a period of 20 years was 5.7 yuan, or an average increase per person of only 0.28 yuan a year. Why was it that the level of distribution of income among the commune members could not have a larger increase over such a prolonged period? We have made a comparison of the figures of production receipts, expenses, accumulations and consumption and found the following: In 1976, the gross income of the basic accounting units of the people's communes of the entire province was 7.326 billion yuan. This was an increase of 4.217 billion yuan over the income of 3.109 billion yuan in 1957, or an increase of 135.6 percent. In 1976, the gross expenses amounted to 2.846 billion yuan. This was an increase of 182.5 percent over 1957. The amount retained by the collectives was 0.609 billion yuan. This was an increase of 0.423 billion yuan over 1957, or an increase of 246 percent. The distribution among the commune members was 57.6 yuan per person, an increase of 23.10 yuan over 1957, or 66 percent. Obviously, over the 20 years the gross income increased rather sizably but the magnitude of the increases in expenses and in accumulation far surpassed that of the gross income. This meant large expenses and high production costs and accounted principally for the small distribution to the commune members.

After the 3d plenary session of the 11th Central Committee, the party committees and governments at various levels thoroughly implemented a series of guidelines and policies of the party. They criticized the "leftist" errors and gradually emancipated themselves from the yoke of "leftist" thought. Big changes were effected in the rural villages. In 1980, in regard to the collective economy of the people's communes in the rural villages. The aggregate income of the production brigades and production teams amounted to 13.8 billion yuan, averaging 213 yuan per person. It was an increase of 17.9 percent over the preceding year. Since this followed an increase of 14.1 percent in 1978 and that of 15.6 percent in 1979, the increase in 1980 meant three big strides in 3 consecutive years. The following tables show the gross income, gross expenses, retentions by the collectives and income distribution to the commune members for the years 1977, 1978, 1979 and 1980 respectively:

	1977		1978	
	Amount (billion yuan)	Percentage of gross income	Amount (billion yuan)	Percentage of gross income
Gross Income	8.87532	100.0	8.84716	100.0
Gross Expenses	3.83978	43.3	3.40540	38.5
Retention by Collectives	1.04124	11.7	0.83540	9.4
Distribution to Members	3.78054	42.6	4.42901	50.1
Average Distribution Per Commune Member	58.6 yuan	--	68.4 yuan	

	1979		1980		
	Amount (billion yuan)	Percentage of gross income	Amount (billion yuan)	Percentage of gross income	Compared with 1977 (percentage)
Gross Income	10.19186	100.0	12.14872	100.0	36.8
Gross Expenses	3.65113	35.8	3.88069	31.9	-11.3
Retention by Collectives	1.06161	10.4	1.22286	10.1	17.4
Distribution to Members	5.29573	51.9	6.83344	56.2	80.0
Average Distribution Per Commune Member	81.5 yuan	--	105.2 yuan		79.5

Over the past 4 years, the income of the commune members increased by 46.6 yuan each, averaging an increase of 11.65 yuan each year. In particular, in the four districts of northwestern Shandong Province, traditionally known for their poverty, the increase in the income of the commune members was especially rapid. The income distribution to the commune members there increased from 50.9 yuan in 1979 to 87.4 yuan in 1980, or an increase of 36.5 yuan in a single year. Among these districts, the average income distribution to commune members in the Liaocheng district amounted to 126 yuan each. This was an increase of 71.2 yuan over the preceding year, or an increase of over 100 percent. In the Dezhou district, the average income distribution amounted to 88.8 yuan per person, an increase of 38.7 yuan over the preceding year and an increase of 50.2 yuan, or 130 percent, over the year 1976. Many communes, brigades and teams were able to emancipate themselves and effect drastic changes within a year's time. They succeeded in changing drastically the long-standing status of "eating grain from the common pot, depending on loans for production work and living on relief." In the meantime, a number of enterprise units of relatively great affluence have appeared in the province. The number of counties in which the average income distribution amounted to 200 yuan per person has increased from 4 in 1979 to 12. The number of production brigades with average income distribution of over 300 yuan per member likewise increased to 698 from 47 in the preceding year. The highest income distribution amounted to 92.6 yuan per person and was found at the Xiao Cun Zhuang brigade, Wu Cun people's commune, in the Sifang district of Qingdao Municipality. Truly a picture of joy and happiness, seldom found for a long time, has been seen in the vast countryside.

Why was it that in the past 3 years, large increases have been made in collective production and in income distribution to the commune members? Concretely speaking, the principal causes were the following:

1. Adoption of Various Forms of Production Responsibility System Suitable to Local Conditions Which Greatly Aroused the Enthusiasm of the Masses

According to statistics as the end of December 1980, in the whole province the number of basic accounting units practicing the system of remuneration on a quota basis was 47.1 percent; those practicing the system of assigning responsibilities to each laborer and to each unit and linking remuneration to output accounted for 35.3 percent; and those practicing the system of assigning full production responsibilities to each household and the system of assigning full responsibilities for task completion made up 13.4 percent. Actual experience has shown that whatever the form of production responsibility system adopted it can still arouse the enthusiasm of the populace and promote increases in production and the practice of economy provided it takes into account the actual condition of the localities, fits in with the development level of the productive force and the management level of the unit concerned, is in line with the degree of consciousness of the populace and closely links production results with the individual interests of the commune members. In the Yantai area which is relatively affluent economically and where the standard of management is usually at a rather high level, the system in force for work on the farmland is assigning quota contracts for each unit or person; in the case of the forestry, animal husbandry, sideline products and fishery trades, the system in force calls for contracting by special trades and linking remuneration to output; and as for farm machines the responsibility system adopted calls for accounting on the basis of the individual machines. Clear-cut production increases were achieved. The income distribution to the commune members grew from 156 yuan in 1979 to 191 yuan per person, topping the whole province. In Xiajin County, the Tangdi production brigade of the Lilou people's commune had in all eight production teams. Among them, the seventh team adopted the system of recording quota workpoints, the eighth team adopted the system of linking remuneration to output for each unit, and the first to the sixth teams adopted the system of assigning responsibilities for a task until its completion to each household. All of them reported increases in production and in income. The seventh team reported a per-mu yield of 110 jin of ginned cotton, an increase of 22 jin over the preceding year. The eighth team produced 100 jin of ginned cotton per mu, an increase of 14 jin. The first to the sixth teams turned out a per-mu yield of 90 jin of ginned cotton, an increase of 70 jin. In comparing the results of the majority of communes, production brigades and production teams planting cotton, it was found that the system of assigning responsibilities to each laborer and linking remuneration to output produced better results than a similar system of assigning responsibilities to each unit or group, and that "linking remuneration to output" worked out better than "not linking remuneration to output." Just as the people said: "Linking remuneration to output links hearts together and people feel concerned about their work." The system of linking remuneration to output can better arouse the enthusiasm of the commune members.

2. Readjusting the Internal Struggle of Agriculture and Putting in Full Play the Superior Points of Cotton and Peanut Production

Many localities in Shandong Province have conditions suitable for the development of cotton and peanut production. The province is the principal production area of cotton and peanut in the whole country. However, production of these two products has been stagnant for a prolonged period of time. As for cotton production, there were two main problems which still exist. One was that the state purchase price of cotton was too low. The other was that the grain ration given to the cotton farmer was too small. In 1950, the ratio of the price of cotton to that of wheat was 1:8.17 (meaning 1 jin of cotton could be exchanged for 8.17 jin of wheat); the ratio of the price of cotton to that of maize was 1:11.21. By 1975 the ratio of the price of cotton to that of wheat and maize had dropped to 1:6.83 and 1:9.7 respectively. At the same time, the problem of the grain ration of cotton farmers remained unsettled for a prolonged period of time. Many communes, production brigades and production teams had to buy grain at a high price from the country fairs. Each jin of cotton was exchanged for only 3.5 jin of wheat or 5 jin of maize. Thus, due to the low price of cotton and the lack of assurance concerning the grain ration of the cotton farmers, the communes, brigades and teams felt that cotton planting was a losing proposition and were unwilling to plant cotton. As a result, despite the fact that each year governments at various levels stressed grasping cotton production and went so far as to "severely criticize those who did not plant cotton and to urge the redoubling of efforts on all sides," it was difficult to fulfill the targets for cotton plantation areas and for cotton output. Whereas the state urged planting of "patriotic cotton," the communes, brigades and teams responded by planting "perfunctory cotton" instead. They would use poor land to plant cotton and generally declined to do any real work on cotton planting. In 1956, the gross cotton output of the province was 4.431 million tan. By 1977 it had shrunk to 2.975 million tan.

In order to heighten the enthusiasm of the communes, brigades and teams to plant cotton, in 1979 the state raised the purchase price of cotton by 15 percent. An additional subsidy of 5 percent was granted to growers in the northern part of the province. In 1980, the purchase price was again raised by 10 percent, and a special allowance of 30 percent was given to the portion of sales in excess of the state purchase quota. In this way, the price ratios between cotton and wheat and between cotton and maize became 1:8.26 and 1:11.79 respectively. At the same time, concerning the grain ration of the cotton farmers, the method of linking cotton and grain and awarding grain for cotton sales in excess of the purchase quota was adopted. This method stipulated that for basic accounting units, each person contributing to the sale of an average of 10 jin of ginned cotton would be entitled to a grain ration of not lower than 365 jin. Thereafter, each additional jin of ginned cotton sold would receive an additional grain ration of 1.5 jin. It further provided that each person selling more than 20 jin of ginned cotton be guaranteed a grain ration of 380 jin and that thereafter, an additional contribution of 1 jin of ginned cotton would be rewarded with 4 jin of grain ration or 2 jin of chemical fertilizer. In the event that the grain ration reached over 600 jin, chemical fertilizer, and not grain, would be awarded. In this way, the communes, brigades and teams felt the advantages of cotton planting and their enthusiasm for cotton planting was greatly aroused. In 1980, the total area devoted to cotton planting in the whole province was restored to 11.05 million mu. This approached the highest level in history and was 2.91 million mu more than the preceding year. During that year, the peanut planting area was 9.36 million mu, an increase of 1.02 million mu over the preceding year. The cotton planting area in the four districts of northwestern Shandong was 8.34 million mu, an increase of 2.43 million mu over the preceding year. In the meantime, advanced production techniques were introduced and scientific planting methods of cotton were adopted. Thus, the area devoted to the planting of the choice seed of "Lu cotton No 1" increased from 1.2 million mu in 1979 to 8.68 million mu. Basically speaking, the use of superior and choice seeds was the general rule. Moreover, since the climatic condition last year was suitable to the growth of cotton and peanut plants, their output was greatly increased. The gross cotton production of the whole province rose from 3.33 million tan in 1979 to 10.74 million tan in 1980, an increase of more than 200 percent. Similarly, peanut production increased from 21.222 million tan in the preceding year to 28.086 million tan last year, an increase of 32 percent. Both the output from individual fields and that from all the fields reached the highest levels in history. Taking into account all the price additions, the gross income of the province from the sale of industrial crops, less 18.6 million yuan due to reduced income yield from the sale of grain, showed a net increase of 1.5 billion yuan, averaging a per-capita increase of 23.1 yuan.

3. Fully Utilizing Local Resources and Actively Developing Multiple-Line Business

In 1980, the income of the whole province from forestry, animal husbandry, sideline products and fishery increased by 330 million yuan over the preceding year. The average increase per capita was 5 yuan. Many years of experience have shown that fully utilizing local resources and actively developing multiple-line business constitute a principal way to increase wealth and to cure poverty in the communes, brigades and teams in the rural villages. It has been found that enterprise units devoting themselves to one trade but engaging in multiple-line business could produce more commodities, thereby enabling the collectives to enlarge their income and the commune members to receive a larger distribution of income. On the contrary, units confining themselves to one line of business were likened to "hanging themselves from a single tree." The economic development of the collectives would be slow and the commune members would receive a low distribution of income. Take the case of the Yantai area for example. Possessing a firm foundation of a stable and high grain yield, the area devoted great efforts to developing multiple-line business. In 1980, the gross income from forestry, animal husbandry, subsidiary products and fishery amounted to 1.304 billion yuan, accounting for 42.3 percent of the gross income. The average per-capita distribution of income was 170 yuan, an increase of 40 yuan over the preceding year. A single unit of manpower in the area could create an income of 889 yuan a year which was 360 yuan higher than the average per-capita figure of the whole province. The sale of products netted an average per-capita income of 190 yuan, which was 106 yuan higher than the average figure for the whole province. The average per-capita share of the fixed assets was 302 yuan, 132 yuan higher than the average figure for the whole province. The average income distribution of the commune members was 191 yuan, which was 85.8 yuan higher than the average figure for the whole province. In the 12 counties in the province with an average per-capita income distribution of over 200 yuan each, the receipts from multiple-line businesses made up 49.2 percent of their gross income. Among the 698 production brigades with an average income distribution of 300 yuan per-capita, with the exception of the 149 production brigades in the 4 districts of northwestern Shandong Province, whose principal income was derived from cotton, the income of all the other brigades derived from the multiple-line businesses made up 70 to 80 percent of the gross income. On the contrary, in the eight counties with an average income distribution of less than 50 yuan, their income from multiple-line businesses (forestry, animal husbandry, subsidiary products and fishery) made up only 29.3 percent of the gross income.

Strengthening Management and Control and Reducing Production Expenses

On account of the disturbances and havoc wrought by the Lin Biao clique and the "gang of four," it became the universal practice not to count costs in production nor the effect of costs on making investments. The result was that the proportion of gross expenditures gradually increased every year. In 1971, it was 32.5 percent. By 1977, it had gone up to 43.3 percent. However, in more recent years, thanks to improvement in management and operation, the strengthening of business accounting and particularly the implementation of the various forms of the responsibility system, many communes, brigades and teams, when enforcing the responsibility system, fixed the expense quotas and the expense limits for the unit, household or individual. This, coupled with the state raising the state purchase prices of agricultural and sideline products, caused the labor productivity rate and the commodity production rate to increase every year. Conversely, the ratio of expenditures dropped year after year. Compared with 1979, in 1980 the economy effected in expenses amounted to over 400 million yuan. This was tantamount to an increased income of 7 yuan per person.

Correctly Handling the Relationship Between the Interests of the State, the Collective and the Individual and Suitably Readjusting the Ratio Between Accumulation and Consumption

In grain distribution, a ruling was made that beginning from 1979, state purchases would be made after the per-capita grain ration had reached 360 jin instead of 330 jin. Computation of retention and consumption would be based on net receipts. Generally speaking, the ratio of apportionment steadfastly adhered to was that taxes and retention by the collective would be about 20 percent of the net income while distribution to the commune members would be around 80 percent. In 1980, the collective retention by the production brigades and production teams of the whole province was readjusted to 19.7 percent of the net income as against 21.9 percent in the preceding year, while the portion distributed to the commune members was raised from 75.5 percent to 77.5 percent. As a result of readjusting the ratio between accumulation and consumption, the average distribution per person was increased by 2.9 yuan. In the comparatively affluent units, the accumulation rate was slightly increased depending on actual need and possibility. This was meant to expand the reproduction capability and to make the commune members more affluent as soon as possible.

Judging from the results of the distribution of the income in 1980, there were certain problems deserving attention and study and needing solution:

(1) The large increase in the income of the farmers of the whole province last year was primarily due to the bumper cotton harvest. Nevertheless, the reduced grain output due to natural disasters made it impossible to carry out completely the policy of linking grain and cotton.

(2) Under the condition of a relatively large increase in the average income distribution to people of the whole province, we must not lose sight of the fact that there are over 90,000 basic accounting units, making up 23.8 percent of the whole, in which the collective distribution per person was below 50 yuan and that in some 54,000 units, making up 13.9 percent of the whole, no cash distribution was effected. In the whole province, there were still 100,000 units which did not produce enough grain themselves to effect a grain ration of 300 jin. This was about 23 percent of the whole. And, in the case of the four districts in northwest Shandong Province, it was about 50 percent. Hence, the important measures to raise the income distribution level for the province as a whole are to summarize the positive experience of the affluent production teams and to study and analyze the reasons for the poor teams' inability to make any progress, thus enabling a portion of the poor teams to speedily develop their production and increase their income.

(3) The ratio of forestry, animal husbandry, subsidiary products and fishery in the gross agricultural income not only has not increased but has decreased in certain localities, dropping from 37.2 percent in 1979 to 35.9 percent, or a drop of 1.3 percent. One reason was that the large increase in agricultural income had brought about a change in the ratio, but the principal reason was that the absolute figure of the income from the four trades had decreased compared with 1979 in such districts as Heze, Liaocheng, Dezhou, Huimin and Linyi. In 1980, these five districts put into full play their superiority in cotton production, and their agricultural income greatly increased. But their income from forestry, animal husbandry, subsidiary products and fishery amounted to only 938.88 million yuan, a decrease of 80.86 million yuan, or 7.9 percent. In particular, there was a sharp drop in income from subsidiary products and animal husbandry. In 1980, the bumper agricultural harvest and the large-scale production increase in cotton and the industrial crops in these districts were due primarily to the favorable climatic condition. In the event that the climate became unfavorable for the production of cotton and industrial crops, the volume of output would conceivably drop and the income distribution to the commune members would conceivably be decreased. For this reason, we must stick firm to taking

one trade as the principal pursuit, fully utilize the local resources, earnestly develop multiple-line business and continue to raise the commodity production rate. Only in this way can we ensure that the commune members' income will be stabilized and will rise gradually and can we make the communes, brigades and teams become really affluent.

(4) Concerning the three-party relationship, some communes, brigades and teams, even under conditions of increased production and increased income, have reduced the absolute figure of retention for the accumulation funds compared with the preceding year. Thus, in 1980, in the Huanhe production team of the Nanzhen people's commune of Gaotang County, the average income distribution per person was [illegible] yuan but the collective retention was only 361 yuan. Quite obviously, this was not favorable to the expansion of reproduction. Instances of this kind should be studied seriously.

(5) The problem of caring for the distressed households under the "five guarantees" and "four categories": some units currently adopted the system of fixing farm output quotas for each household, or assigning full responsibility for the task completion to each household, or assigning responsibilities to each laborer and linking remuneration to output did not take sufficient care of the households under the "five guarantees" and the "four categories" and other distressed households. Some units did not have the time to pay such attention to them. As a result, some of the people of distressed households had to leave their abode and seek a living elsewhere. Although this occurred only rarely, it was still a problem requiring urgent attention.

(6) In the case of units under the system of fixing of farm output quotas for each household or the system of assigning full responsibilities for task completion to each household, a suitable system and method for collecting statistics and accounting for the quantity of output and the amount of income and for doing a good job of financial management was still lacking. For this reason, the urgent problem before us now which must be studied and solved is how to seriously summarize and study the new situation, solve new problems and enable management and operations to suit the development needs of the new situation.

CSO: 4007/13

BRIEFS

FOOD INDUSTRY FORUM--Jinan, 23 Sep (XINHUA)--The ministry of agriculture recently sponsored a national forum in Taiwan County, Shandong, to review the situation in the commune- and brigade-run food industry in China. The participants concluded that China's rural areas have great potential for the development of food industry in view of the vast raw material resources, the existing processing techniques and the potential market. According to a survey conducted by the state statistical bureau, people in urban and rural areas respectively spend 60 and 70 percent of their total expenditure on food. The forum maintained that to speed up the development of China's food industry, the policy of procurement of agricultural and sideline products must be further relaxed in the rural areas. [OW231525 Beijing XINHUA Domestic Service in Chinese 0205 GMT 23 Sep 81]

POOR COUNTIES' INCOME--Beijing, 29 Sep (XINHUA)--According to the ministry of agriculture the 1980 per capita income from collective distribution for 21 of China's 221 poor counties neared or surpassed the 1980 national rural per capita income of 86.4 yuan, while 51 of the remaining 200 poor counties also made headway in raising the average commune members' income from collective distribution. Poor counties are defined as those with an annual per capita income from collective earnings under 50 yuan from 1977 to 1979 consecutively. Because of the party's rural economic policies, the 1980 rural per capita income from collective distribution for Chiping, Shenxian and Heze Counties in Shandong and for Luyi County in Henan increased to more than 100 yuan and that for Shandong's Gaotang and Xiajin Counties increased to more than 150 yuan. But China still has 149 poor counties where the rural per capita income from collective distribution remains below the level of 50 yuan. [OW231525 Beijing XINHUA Domestic Service in Chinese 0811 GMT 29 Sep 81]

CSO: 4007/10

BRIEFS

RESERVOIR CONSTRUCTION--Since the founding of the PRC, Sanming Prefecture, Fujian, has built a number of reservoirs with total water storage capacity of more than 100 million cubic meters. The reservoirs have turned 56 percent of the prefecture's farmland into land which guarantees good harvest irrespective of drought and flood. The prefecture has also built more than 1,500 small hydroelectric power stations with total power generating capacity of more than 110,000 kw. In 1980, the prefecture produced 1.86 billion jin of grain and its total industrial output value amounted to 1.22 billion yuan. [OW301655 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 28 Sep 81]

GRAIN PROCUREMENT--As of 24 September, Putian Prefecture, Fujian, had procured some 220 million jin of summer grain from the peasants, overfulfilling the state procurement quota by 70,000 jin. [OW301655 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 29 Sep 81]

CSO: 4007/9

BRIEFS

INDISCRIMINATE LOGGING--Indiscriminate logging is still serious in Wanning County in Guangdong Province. According to the statistics produced at the beginning of August, at least 1,500 people go to mountain areas to cut down trees each day. According to the estimate of the county forestry department, rate of increase of timber each year is around 60,000 cubic meters, but the consumption rate is 140,000 cubic meters. If the situation drags on like this, all the forests will be destroyed in 6 to 7 years. Wanning County recently set up a forest protection control office in order to curb indiscriminate logging and formulate appropriate measures. In addition to this, the county leaders appeal to various departments for cooperation in curbing indiscriminate logging in order to conserve forest resources. [Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 12 Sep 81 HK]

CSO: 4007/10

HEILONGJIANG

COMPREHENSIVE UTILIZATION OF TIMBER PROMOTED

Beijing RENMIN RIBAO in Chinese 20 Aug 81 p 2

[Article: "Heilongjiang Province's Forest Region Develops Comprehensive Utilization of Timber; Realizing Reduction of the Yield of Timber Without Reducing Production Value and Without Reducing Contribution to the State"]

> [Text] Editor's Note: The forest region of Heilongjiang has developed comprehensive utilization of timber in a big way, realizing a reduction in the yield without reducing promotion value or contributions to the state. This shows that forest regions have a great potential in the readjustment of the economy. To protect forests and develop forestry, the party Central Committee and the State Council have decided to gradually reduce the yield of timber so that the amount of timber felled does not surpass the amount of growth of the forest. In this situation, how can the enthusiasm of forestry enterprises and workers be developed and how can the supply of timber be assured? One good method is to develop comprehensive utilization of timber. When this work is done well, forestry can develop and the shortage of timber can be alleviated to a definite degree. The method of the forest region of Heilongjiang can serve as a lesson for the forest regions of each locality.

Reporter Tan Peiquan [6223 0160 0356] reports: The forest region of Heilongjiang Province has actively implemented the policy of readjustment. With a yearly decrease in the yield of timber, it has developed comprehensive utilization of timber in a big way. The branches and bark that used to be thrown away and burned are now processed to make artificial board. Small pieces are processed to become useful wood and to substitute for the reduction in the yield of timber. Thus, the yield of timber has been reduced but the production value and the contribution to the state have not been reduced.

The forest region of Heilongjiang is an important timber production area in our nation. In the past, the policy of singular production of logs was carried out for a long time, thus resulting in overfelling and a drastic drop in forest resources. Of the 40 forestry bureaus throughout the province, the forest resources of 8 bureaus are already depleted and 25 bureaus have been forced to readjust to a reduced yield of timber. The enterprises face the difficult situation of loss. Since the Third Plenum of the party, Heilongjiang Province has proposed that the forest region shift the central emphasis on production to an emphasis on forestation in order to create new forests and to implement comprehensive utilization of timber. In this way, the felling area can be reduced to conserve forest resources and also the gain from the forest region can be increased and unemployed youths can be employed. According to statistics, the entire province now has 993 comprehensive timber utilization plans (shops). The main products total 168 kinds and the total production value has reached 316 million yuan, constituting 24.2 percent of the production value of forestry. Last year, the whole province's forestry realized a profit of 125 million yuan, of which profits from comprehensive utilization amounted to 104 million yuan, equivalent to 1.6 times the profit from timber production.

Recently, the provincial government of Heilongjiang held a provincial comprehensive timber utilization meeting at the Tieli Forestry Bureau in Yinchun city to further summarize the historical experience, establish development plans for the next 3 years, call upon the broad ranks of forestry workers to bring out the old spirit of timber production to carry out the work of comprehensive utilization of timber well and to push this newly established industry one step further. First, regarding the utilization of raw materials, previously the three remnant materials were mainly wasted (branches remaining after felling in the forest region, pieces of wood remaining after forestation, and bark and scraps of wood remaining after processing and sawing wood). Now, the percentage of utilization of the "three remnants" has increased from 25 percent in 1979 to 25.2 percent. This percentage has reached about 34 percent in the Yinchun forest region, which has the highest percentage of utilization. Second, the direction of the products of comprehensive utilization of timber has changed from the production of small boards and similar raw material products in the past to the production of products urgently needed in the light industry market, such as new and inexpensive but beautiful floor type lamp supports, coat hangers, clothes and basin hangers, and cases for radios, television sets, floor model speakers and such new products. Third, while not increasing the state's investment, the forest region relied on the collective ownership economic system, and used the "snowballing" method to accumulate capital to hasten the speed of development. Now, there are 152 factories that have preliminarily formed a productive capability in the forest region, producing 35 kinds of products with a production value of 180 million yuan, constituting 1.3 times the production value of comprehensive utilization of timber by the state-run enterprises. Intellectual youths employed in comprehensive utilization and production of timber number 56,000, constituting 24 percent of the total number of intellectual youths employed.

9296
CSO: 4007/570

BRIEFS

FARM PRODUCT PRICES--Harbin Municipality, Heilongjiang Province, is imposing price restrictions on 27 farm products including vegetables, meat, chicken, fish, rice, soybean oil and fruits sold at 34 farm product markets in the city 29 September to 3 October. The restriction is being imposed to check spiralling prices. The Harbin No 2 commercial bureau urged personnel in charge of market administration to intensify investigations of the quality of farm products marketed, prevent adulterated goods from being marketed and ensure that retailers abide by laws and conduct business transactions honestly. [SK301110 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 29 Sep 81]

FALL HARVEST RESULTS--Autumn harvest is in full swing in rural areas of Heilongjiang Province. By 29 September, the province had harvested 31 million mu of field crops, 36.8 percent of the field crops to be harvested. Because of floods, the autumn harvest has been delayed in most areas of the province. Various localities are now concentrating on harvesting soybeans and other crops. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 1 Oct 81 SK]

CSO: 4007/10

BRIEFS

TOBACCO TRANSPORTATION--Working in coordination with the Henan Provincial Economic Committee and supply and marketing cooperatives, the Zhengzhou Railway Bureau has actively organized transportation of tobacco leaves in order to assist light industrial production. Henan Province has reaped a bumper harvest of tobacco leaves this year and the amount of required transportation is expected to increase by 100 percent. By the end of August, some 8.1 million tobacco leaves had already been transported to Beijing, Tianjin and Shenghai to assist production of light industrial products. [Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 14 Sep 81 HK]

FORESTRY PROTECTION CIRCULAR--Recently, the Henan Provincial CCP Committee and the Provincial People's Government issued a circular on implementing the state council's decision on forestry protection. The circular consisted of 10 points: 1) stipulate rights to occupy mountain and forest areas; 2) establish and perfect the production responsibility system of forestry; 3) strengthen protection of forests and popularize knowledge of forestry and the legal system; 4) practice rational lumbering and strengthen management of timber; 5) vigorously promote afforestation and increase the area of vegetation in the province by 15 percent by 1985, 20 percent by 1990 and over 25 percent by the end of this century; 6) readjust the proportions of agriculture, forestry, animal husbandry, sideline occupations and fisheries in light of local conditions; 7) run well state, commune and brigade tree farms; 8) develop education in science and technology regarding forestry, 9) set up a system of raising funds to assist development of forestry; and 10) strengthen party and government leadership pver forestry. [HK280910 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 10 Sep 81]

FARM OUTPUT--Dengfeng County, Henan, in 1980 delivered to the state 25 million jin of grain, either turned in as tax in kind or sold as surplus grain. In 1981, the country yielded 10 percent more wheat than in 1980. It is growing 120,000 mu of tobacco and the output this year is estimated to be around 37 million jin. [Beijing Domestic Service in Mandarin 1200 GMT 27 Sep 81]

CSO: 4007/9

JIANGSU

BRIEFS

COTTON HARVESTING--As of 23 September, peasants in Yancheng Prefecture, Jiangsu, had picked more than 994,000 jin of unginned cotton. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 28 Sep 81]

CSO: 4007/9

JIANGXI

BRIEFS

COTTON OUTPUT--Duchang County, Jiangxi, this year reaped 75,000 dan of cotton from its 100,000 mu of cottonfields. This year's cotton output is 6,000 dan more than the 1980 output. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 29 Sep 81]

INDUSTRIAL CROPS--Shangrao Prefecture, Jiangxi, has increased its acreage for industrial crops this year by 250,000 mu as compared with last year. The prefecture has also expanded acreage for tea gardens by 49,000 mu. As a result, the prefecture's total tea leaf output this year has reached 98,000 dan. In addition, the prefecture has bred over 300 million fry in lakes and ponds. Output of aquatic products has reached 170,000 dan. Yshan County raises 143,000 long-haired rabbits as sideline production. [OW011335 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 30 Sep 81]

CSO: 4007/9

BRIEFS

SEED SELECTION--Jilin Province has scored achievements in selecting seeds this year. According to statistics compiled on 30 September, the province has selected 97,300 tons of various fine grain seeds, 32 percent of all stored seeds. [Changchun Jilin Provincial Service in Mandarin 2200 GMT 30 Sep 81 SK]

CSO: 4007/10

COMMUNE'S IMPLEMENTATION OF RESPONSIBILITY SYSTEM DESCRIBED

Beijing RENMIN RIBAO in Chinese, 20 Aug 81, p 2

/Article: "Ten Questions Concerning the Responsibility System--A Survey of Zhongtan Commune in Togtoh, Nei Monggol"/

/Text/ Zhongtan Commune of Togtoh County in the Inner Mongolia Autonomous Region is situated on the north bank of the Yellow River. The soil is fertile, irrigation is convenient, and natural conditions are good, but because of the method of "eating from the big pot" in business management, it remained poor and backward for a long time and became "a three dependent commune." In 1980, this commune implemented the business management method of "the big contract" and has relatively quickly shaken off the state of poverty. This change also brought about some new situations and new questions. The Zhongtan Commune mobilized the masses, started out from the actual situation of the locality, and found methods of solving some new problems by adhering to the principles of facilitating the development of production, facilitating consolidation of the collective economy and facilitating the commune members, adhering to the spirit of the state and unifying those things which can be unified and separating those things which can be separated.

In general, the commune has answered the following 10 questions:

1. How are draft animals raised, managed and used? They started out from facilitating the use and aiding the protection of collective property, and use the method of "pricing the animals and assigning them to the commune member families, which are given the power to manage and use the animals." The commune members carry out democratic discussion and evaluation to establish a price that is slightly lower than the market price. After the commune members receive the draft animals, they can trade the animals in for more suitable draft animals. But when one animal is sold another must be bought, and the price cannot be lower than the price of the animal sold. Before new animals are bought, the money for the animals must be deposited in the bank and cannot be used for other purposes. Now, the raising, management and use of draft animals have all improved greatly.

2. How are tractors, automobiles and large items of farm equipment managed? They have implemented "contracting the equipment to the person, accounting for individual equipment, accounting wages in joint production, and rewarding surplus production." For example, the Xiatan Brigade has contracted tractors to the operator for management, reduced the cost, and the planting cost per unit of machinery has dropped from 1 yuan to 0.8 yuan.

3. How are medium and small items of farm equipment managed and used? The plow, the drill, rake, rod and such small farm tools are priced and sold to the commune members. The money is then deposited in a bank and it is not allowed to be used for other purposes. Rubber tired carts, rice milling machines and flour milling machines are uniformly managed by the production team. The commune members use them for a fee. If they are damaged, they must be paid for according to their price. Commune members who use the buildings and the machinery of the collective to carry out such sideline production as flour mills and bean curd mills must pay a management fee and a depreciation fee to the production team. This has provided convenience to the production and the life of the commune members and has avoided loss, damage and waste of collective property.

4. How are large-scale farmland water conservancy projects carried out? They use "unified planning, unified construction, distribution of duties to families according to the amount of the gain, and completion according to schedule." In this way, the duties are clear, the responsibilities are concrete, and the results have been good. Last year, the rechanneling of the Dahei River, a project involving moving 380,000 square meters of earth, was completed. A drainage canal was dug and small ditches were cleaned and repaired. Up to now, the "most difficult" water conservancy project has been that of the Heshang Yingzi Brigade. On the second day after the project was commissioned, over 100 laborers went to the site. Some commune members spent the night rushing to the construction site and quickly completed the task of construction.

5. How are machine planting and irrigation carried out? Attention is given to three points: One is that distribution of land adheres to the past practice of zoning large patches of land to facilitate machine planting. The second is to plant crops in zones. Before sowing, the production team proposes a planting plan. The plan is subjected to democratic discussion by the commune members to determine the plots and the crops. Each family carries out planting according to the planting plan determined by resolution. Practice has shown that most commune members are willing to plant according to the plans decided on by the collective. The few who refused at first were able to change their minds after working. The third is to collect machine planting fees and irrigation fees. Each family pays for a share according to the gain. Fees are prepaid before machine planting and irrigation are carried out. Those who refuse to pay the fees are not given machines for planting and for irrigation. In this way, the area of machine planting and the area assured of irrigation have been expanded. The individual, the collective and the state do not owe anyone anything.

6. How is food grain procurement carried out? There are five links: 1) In spring when contracting for land, the 5-year contract plans for the task of producing food grains to be sold to the authorities and the task of producing varieties of food grains are given to the families without being changed so that the commune members will know how much must be submitted at year's end, what varieties are to be submitted, and the amount of food grain crops to be arranged for the whole year. 2) Purchase of food grains after autumn is realized according to contracts. 3) Farming taxes are strictly collected. The amount of food grains submitted is determined by the amount [illegible] taxes to be paid in accordance with the demands of contracted production and tax requirements of the land. Payments affecting rations of food grains are reimbursed by returned sales. 4) The amount of production reduced because of disasters, incomplete contracts, and deductions must all be discussed and resolved by discussion in the meeting of the entire commune membership. 5) The work of "individual families" has

been done well. The very few families that have had food grains on hand and have not submitted food grains according to contract stipulations have had to explain their reasons to the entire commune membership, then the commune members have carried out discussion and evaluation. After doing this, last year, the entire commune's food grains procurement task was completed quickly and well. The task of procuring 500,000 jin set by the state was completed by submitting 730,000 jin, and 70 percent of this amount were superior quality food grains.

7. How is public savings withheld? According to the size of the contracted land, each year, 1 to 3 yuan are withheld as public savings and public welfare benefit funds from every commune member contracting a full quota of land. Withholdings from commune members not contracting a full quota of land are less.

8. How are triangular debts cleared? The portion of the loan owed to the state by the collective is placed under the names of the commune members according to how much the commune members owe the collective. The commune members are required to repay the debt in full in 5 years, repaying 20 percent each year. The interest is paid by the collective. Those who do not repay the debt according to plan will have to pay the interest on the amount of the yearly debt by the commune individuals themselves. After transferring the accounts, the loan still owed to the state by the collective is paid from the income from the collective's sideline production.

9. How are the lives of the five guaranteed households and the four category families taken care of? These families can be given full land quota contracts, partial land quota contracts or not given any land contracts according to their individual situations. Regardless of whether they contract for the land or not, the state and the collective should give them the proper benefits in accordance with the policy and should take care of them as usual.

The five guaranteed households contracting land are not given tasks for submitting their yields and their income is not subjected to withholdings. All products belong to the households. The five guaranteed households not contracting land are given rations of food grains by the production teams; the standard ration should not be less than 400 jin.

The four category families that contract less land with insufficient rations can buy rationed food grains from the production team (because these families have extra economic income); payment should not be delayed nor should overpayments be made.

10. How are production team cadres and civilian teachers subsidized? After implementing the "major contracts," the cadres also contract pieces of land. Regarding subsidies, this commune changed the past work point subsidies to cash subsidies. The party branch secretary, brigade commander and accountant of each brigade is given a subsidy of not less than 200 yuan each year. Subsidies for the production team leader are not less than 100 yuan a year. Other concurrent cadres are subsidized for actual absence from labor. Civilian teachers receive state subsidies of no less than 30 yuan a month per person. The capital for subsidies mainly comes from income earned by sideline production of the commune and the brigade. The shortage is solved by using the withholdings of the collective. In 1980, this commune reduced the number of cadres enjoying subsidies by 50 percent.

Zhongtan Commune reduced the cost of production, consolidated the collective economy, and improved the standard of living of the commune members by solving these 10 problems. Last year, the yield of food grains of the entire commune was double that of 1978. The production cost dropped by 12 percent. In 1978, the commune consumed 2.3 million jin of food grains resold by the state. The per capita income reached 100 yuan. The entire commune also purchased seven large farm machinery units and over 200 head of farm animals.

9296
CSO: 4007/570

BRIEFS

COTTON CROP LOSS--Xian, 24 Sep (XINHUA)--Recent floods in Shaanxi destroyed some 89,000 mu and inundated more than 147,000 mu of cotton fields in Weinan Prefecture. Of the inundated cotton crops, some 80,000 mu will yield no harvest at all this year. Cotton peasants in the prefecture are striving to combat the floods in order to minimize cotton crop losses. The prefecture this year grew 2.07 million mu of cotton, which accounted for more than 50 percent of the total cotton area in Shaanxi Province. [OW051141 Beijing XINHUA Domestic Service in Chinese 0139 GMT 24 Sep 81]

CSO: 4007/10

BRIEFS

HUIMIN PREFECTURE DROUGHT--Huimin prefecture, Shandong Province, has been seriously plagued with drought in autumn sowing. In addition to holding an antidrought rally to arouse the broad masses of cadres and the people to go into action immediately, principal responsible personnel of the prefectural CCP committee and administrative office have led the masses to go deep into irrigation areas to support autumn sowing by carrying out irrigation operations. The industrial and communications, financial and trade and agricultural departments under the prefecture have also organized work groups to deliver funds and materials for the operation. By 25 September, the prefecture irrigated 1.89 million mu of farmland and sowed 1.1 million mu of wheat. [SK300414 Jinan Shandong Provincial Service in Mandarin 2300 GMT 28 Sep 81]

CSO: 4007:10

MEASURES FOR GAINING CONSISTENTLY HIGH LATE RICE CROP YIELDS OUTLINED

Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 5 Aug 81 pp 1-3

[Article by Shanghai Municipal Farm Skills Promotion Station: "Tentative Discussion of Measures for Consistent Yields of Late Crop Rice in Suburban Areas"]

[Text] 1980, when late rice crop yields throughout the city amounted to 362 jin per mu, produced the lowest yields since the promotion of the three crop system. A survey showed the structure of output to have been: 284,200 effective panicles per mu; grains per panicle totaling 54.95; an empty husk rate of 38.62 percent, and a per thousand grain weight of 24.73 grams. Comparison with average figures for the six previous years showed a decrease of 74,200 effective panicles, an increase of 7.77 grains in the total number of grains per panicle, a 20.45 percent increase in the empty husk rate, and a 1.92 gram reduction in the per thousand weight of grains. Everyone is aware that the output of paddy rice and changes in the number of panicles, the number of grains, and the grain weight, in addition to being decided by the hereditary characteristics of the variety itself, are related mostly to environmental conditions throughout the growing period. Thus, conscientious analysis of the relationship among climatic conditions, the situation in planting and care, and growth and development of the late rice crop are extremely important in assimilating the lessons of experiences in disaster years, and in establishing farming methods for consistent output in normal years.

Effects of Climatic Conditions on Late Crop Rice

In 1980, climate was abnormal. During the growing season for the late rice crop, temperatures were low; skies were overcast; and sunshine was scant. Data from the Municipal Meteorological Bureau shows that from mid-June until late October, effective accumulated temperatures above 10°C amounted to 1910°C, 74°C less than for most years. Amount of rainfall stood at 924 millimeters, 304 millimeters more than for most years. Sunshine was particularly lacking, amounting to 969 hours, 207 hours less than for most years. All this was extremely disadvantageous for growth and development of the late rice crop. A simple analysis for each stage follows.

1) Seedling propagation stage. Between mid-June and late July, effective accumulated temperatures were lower than normal. Overcast and rainy days totaled 32, 7.5 days more than in ordinary years. Quantity of precipitation was 77.7

millimeters more than normal, and sunshine was 105 hours less than normal. The plum rains began early and lasted a long time. Sowing of the late rice crop was everywhere delayed. In Jinshan County, it was delayed for three or four days, and in Nanhui County, some late geng varieties were not sown until around 20 June. In order to be able to plant more early rice, some communes and brigades retained fewer seedling fields, and used an increase in quantities sown to shorten seedling age, while at the same time restricting fertilizer and water, and preventing close planting and burgeoning growth of plants. This, plus the long period of overcast and rainy weather following planting, impaired the healthy growth of seedlings. Data from five counties in Songjiang and Chuansha shows from 3.72 to 4.33 green leaves per individual seedling at the time of transplanting, a width at the base of seedlings of 0.48 to 0.58 millimeters, and a dry weight of individual plants of 0.20 grams. This represents a decrease of 0.10 to 0.88 leaves per plant as compared with 1979, a 0.02 to 0.09 millimeter reduction in width at the base of seedlings, and a decline by about 0.10 millimeters in the dry weight per plant. When quantity sown was fairly great, seedlings were spindly and weak.

2) The tillering to booting stage. Comparison of climatic conditions between early August and mid-September with normal years shows a 95.6°C reduction in effective accumulative temperature, 12.2 more days of rain, a 327 millimeter increase in amount of rainfall, and a 133.6 hour reduction in the amount of sunshine. During August, temperatures averaged 24.8°C; rainfall amounted to 455 millimeters, and there were 108 hours of sunshine for a chilly and rainy summer such as has not been seen in 100 years. Farming was conducted as for years when climatic conditions were good. Major manifestations were a delay in transplanting. Rice transplanted throughout the city after Liqiu [7 August] amounted to 47.5 percent of the total, 20 percent more than in 1979. Second, density of transplanting tended to be sparse and the number of basic seedlings few. Density of late rice planting throughout the city was about 40,000 holes per mu containing 281,900 basic seedlings. Investigative data from Fengxian for the past several years shows this year to have been the one of sparsest density of plantings and the fewest basic seedlings (See Table). Third, the basic fertility of some fields was inadequate, and top dressings of fertilizer were not applied promptly, as a result of which plant growth was slow after planting. During the Limit of Heat period [around 23 August], the number of tillers totaled only 359,500 per mu, and the shortness of plants, slow leafing, and delayed transplanting were particularly noticeable. Examination during the Limit of Heat period in Jiading County of the late rice crop that had been transplanted after Liquiu [7 August] showed plants to be 1.43 centimeters shorter, the number of green leaves per stem to be 0.25 fewer, and the leaf surface coefficient to be 0.95 less than for the same period in 1979. Leaf ages for "Jianong 485," "Jianong 762," and "Guizhino" were 1.72, 1.16, and 1.56 less respectively. Numerous communes and brigades did not act in accordance with meteorological forecasts. Concerning themselves only with hastening the growth and development of the late rice crop, they applied another substantial amount of chemical fertilizer after the Limit of Heat. This caused an "overall dark" appearance, and delayed development. Because of the early onset of overcast and rainy weather with low temperatures, cold damage was increased.

Density and Number of Basic Seedlings For Late Rice Crop in Fengxian County

1976 - 1980

Year	1976	1977	1978	1979	1980
Density per 10,000 holes	4.29	4.02	3.98	3.75	3.63
Basic Number of Seedlings	37.48	30.6	32.03	28.04	28.01

(10,000/mu)

3) The heading, flowering, and in the milk stage. Between late September and late October, effective accumulated temperatures, rainy days, and amount of rainfall were about the same as in normal years. Sunshine was 18.5 hours less than in normal years, but principally low temperatures arrived early (beginning on 19 September), and the period of low temperatures and rainy weather was long. Daily temperatures averaged as low as 20°C, and maximum temperature was as low as 23°C, the minimum temperature being around 17°C. Such weather had not been seen for 100 years, and it seriously impaired the flowering and pollination of the late rice crop. Meanwhile, the appearance of continuous overcast and rainy weather caused serious outbreaks of rice neck-blast disease, causing losses of about 110 million jin. Delayed application or heavy applications of fertilizer induced excessive growth of rice, causing even greater damage. A survey done in Shanghai County showed the plant disease rate when 100 to 110 jin of chemical fertilizer (converted to quantity of ammonium carbonate) per mu was used to be 8.32 percent. The plant disease rate when about 160 jin was used was 55.4 percent. When about 180 jin was used, the plant disease rate was 65.05 percent. In addition, the plant temperatures during the in-the-milk stage were less than in normal years, and an early frost occurred on 26 October, causing definite impairment of seed weight.

Technical Measures for Consistent Output from the Late Rice Crop

Years since Liberation in which effective accumulated temperatures have been as low as during 1980 have included 1957, 1972, and 1974. However, even in 1974 when heat conditions were so poor, the late rice crop produced yields of 605 jin per mu, and in 1980, there were also some high yield fields that produced yields of from 700 to 800 jin per mu. The experiences of many years tell us of the need to apply successful farming experiences to the growing of late crop rice in accordance with the laws of climatic change. If we rely only on the experiences gained during one or two years of particularly fine weather conditions to guide production, it is very possible that a crop failure may be caused as a result of the use of technical measures that are inappropriate to the temperature conditions of a given year. According to an analysis done by the Municipal Academy of Agricultural Sciences, beginning on 16 September, the Shanghai area may sustain low temperatures for three days or more during the flowering period. For late crop rice that reaches full heading before 18 September, in four years out of 100 more than three days in a row of average daily temperatures as low as 20°C have occurred. For five years, there were more than two days during the 11 days before full heading when minimum temperature was as low as 17°C, causing impairment in meiosis and a damage rate from low temperature of 9 percent. Full heading on 20 September took place for 10 years and seven years respectively, one year of which had damage from low temperatures on two occasions for a low temperature damage rate of 16 percent. Full heading prior to 22 September occurred for 12 years and 13 years respectively, four years of which saw damage from low temperatures on two occasions for a low temperature damage rate of 21 percent. If full heading is delayed until 23, 24, and 25 September, the low temperature damage rate becomes 27, 34, and 42 percent respectively. It is necessary, additionally, to know how high accumulated winter and springtime temperatures are during the growing season for wheat, barley, and naked barley. Data from the Municipal Agriculture Meteorology Institute shows that if effective accumulated temperatures of above 3°C are lower than 1350°C between mid-November to late May, ripening of wheat, barley, and naked barley will be delayed, and the transplanting and ripening of early crop rice will be commensurately delayed as well, and in years of low accumulated winter and springtime temperatures, generally low temperatures during the autumn system will come early.

In view of the aforestated climatic laws, technical measures for consistent yields from the late rice crop requires mastery of the following several points.

1) Distribution of varieties and rotation of crops must be in accordance with the season. The safe full heading period for late crop rice requires that full heading occur prior to 22 September if losses from low temperatures and cold damage are to be reduced, consistent yields assured in disaster years, and bumper yields obtained in normal years. A fine harvest was reaped from the 1974 late rice crop, thanks largely to the distribution of crop varieties, and fairly good arrangements for crop rotation. In the case of the early rice, for instance, exceptionally early varieties accounted for 12.7 percent; early ripening varieties accounted for 55.6 percent; medium ripening varieties accounted for 18.9 percent; and late ripening varieties accounted for 12.8 percent, creating conditions for the early transplanting of the late crop rice. In 1980, by contract, exceptionally early ripening varieties in the early rice crop were extremely scarce, and early ripening varieties accounted for only 9.5 percent. Medium ripening varieties amounted to 65.1 percent, and late ripening varieties accounted for 25.4 percent. As a result, late crop rice could not be transplanted at a suitable early date. More than 400,000 mu, or about 20 percent, had to be transplanted after 10 August. As a result, henceforth, except for some communes and brigades with a lot of land relative to workforce that will want to adjust the three crop and two crop system of planting in accordance with realities, most communes and brigades will mostly have to make arrangements for a proportion of varieties of crops that ripen at different times in a three crop system, with medium ripening varieties being paramount and matched up with different proportions of early ripening and late ripening varieties. Arrangements for wheat and early rice varieties must be made so as to provide for some early sowing of the late rice crop. Cropping arrangements for the year must be mostly early (early ripening barley and naked barley), medium (medium ripening early xian rice), and late (late maturing late crop geng rice), plus arrangements for some early (early ripening barley and naked barley), early (early ripening xian rice), late (late ripening late crop geng rice), and early (early ripening barley

and naked barley), medium (medium ripening early xian rice), and medium (medium ripening late crop geng rice). Distribution of varieties and crop rotation of late crop rice must proceed from the principle of "seeking high yields when consistent yields have been attained." In addition to providing for medium ripening late geng varieties, it is necessary, as well, to provide for a certain proportion of medium geng and late xian. Selection should be made of varieties with a short growing season that are fairly resistant to cold and diseases and have fairly good bumper output characteristics so that full heading may safely take place under disadvantageous climatic conditions and consistently high yields be obtained.

2) Propagation of good seedlings to make up for insufficient open field growing season. At the present time, most late season rice is late geng varieties that are sensitive to a shortage of illumination, and which when grown as a late rice crop have a delayed sowing season. When subjected to high temperature conditions, the nutrative growth of seedlings is accelerated and the time shortened: consequently temperature becomes a major element affecting growth and development of late season rice. Observations made between 1973 and 1977 by the Sanlin Commune Meteorology Outpost in Shanghai County show that accumulated temperatures of above 10°C required for Shuangfeng No 1 from the time of sowing until full heading amount to from 1470 to 1490°C. Thus, suitably early sowing can assure effective accumulated temperatures between sowing and full heading, and the safe attainment of full heading, which can both make up for inadequate vegetative growth, and gain remarkable benefits in consistent yields. In 1980, the Yingfang No 1 Brigade of Caojing Commune in Jinshan County had 135 mu of "Guinong 12," of which 70 percent had been sown before 16 June, and which had been transplanted on time and suitable cared for. Between 14 and 16 September it formed heads for per unit yields of 719 jin. Conversely, the Hongqi No 7 Brigade of Luxiang Commune in the same county had 164 mu of "Guinong 12," 70 percent of which had been sown after 20 June. As a result, heading occurred after 20 September; there were numerous raised panicle heads; and per unit yields were only 68 jin. It should be noted that early sowing and delayed transplanting at a long seedling age frequently results in "small panicles," requiring use of the method of sparse sowing for strong seedlings to resolve the conflict between early sowing and delayed transplanting. Promotion of the experiences with branching twice of Jiading and Qingfu can also solve the problem of excessive seedling age in the "final" rice crop. By this is meant retention of numerous seedlings from the first branching at a rate of 60 to 70 plants per chi, and then tending them for six or seven days so that the rice seedlings grow somewhat sturdy. When the "final" seedlings are transplanted, seedlings may be culled to leave only 25 to 30 plants per chi. In this way, the seedlings of the late rice crop whose transplanting has been delayed amount to "two stage propagation of seedlings," and can produce high and consistent yields.

3) Increase in transplanting quality, making full use of the growing season. If the quality of transplanting is good, all the rice seedlings that are planted will survive. This amounts, in effect, to lengthening the vegetative growth period to lay a foundation for winning high yields. In order to increase quality of transplanting, the first requirement is "earliness." Experiments conducted by the Municipal Academy of Agricultural Sciences show that when "Jianong 15" is transplanted between 31 July and 12 August, for every day of delay, output will be reduced by 27 jin per mu. The second requirement is to establish environmental

conditions for early survival and early development. Quality of soil cultivation must be good, organic fertilizer must be well composted, basic fertilizer must be adequate, and miscellaneous manures must be well mixed. The third requirement is transplanting in the afternoon and shallow transplanting. When transplanting is done after 3:00 p.m., high temperatures are on the wane, and new roots will begin to appear overnight in a process that is virtually free from failure. Shallow transplanting means rapid growth. Observations show that when seedlings were planted between 2 and 3 centimeters deep, growth occurred within three days; when planted between 4 and 5 centimeters deep, growth took seven days; when planted 7 to 8 centimeters deep, growth required 10 days. The fourth requirement is reasonably close planting and the transplanting of a sufficient number of basic seedlings. By so doing, if climatic conditions are good, growth will occur rapidly and the number of panicles will be increased. If climatic conditions are poor, a certain number of panicles will develop to assure consistent yields. Ever since 1974, the number of effective panicles on the late rice crop in the suburbs has declined from around 400,000 to 254,200 in 1980. This has resulted primarily from a reduction during the past two or three years in the number of transplants per mu and in the basic number of seedlings. As a result, the density of transplanting of the late rice crop has generally been from 45,000 to 50,000 transplants per mu and about 300,000 basic seedlings.

4) Intensification of fertilizer and water management to make sure of early development and steady growth to keep apace of the season. The absorption of fertilizer by late crop rice takes place early and is more concentrated than for single season late rice. In applying fertilizer, the principle of "sufficient basic fertilizer and rapid follow-up applications of fertilizer" must be mastered. The method for application is as follows: supposing the basic applications of fertilizer to be adequate, early transplants should be given a follow-up application and a supplemental application. Mid-season transplants should be given a single application; and transplants put in after Liqiu [7 August] should have "three fertilizers," (basic fertilizer, topdressing of fertilizer, and a follow-up application of fertilizer). Usually no further applications of fertilizer are made after 20 August. There should be management of field water, and use being made of water to regulate the amount of fertilizer reading plants. Depending on the condition of the seedlings, the soil, and the weather, water should be drained from the fields at the right time to promote early development and rapid growth to establish conditions for bumper yields before the advent of the Limit of Heat [around 23 August]. With consistent growth in mid season, development of healthy plants, and a smooth transition into reproductive growth, early heading can occur and full heading come about safely. If this does not happen, the situation will run counter to one's desires. In 1980, the weather caused very poor growth of the late rice crop, and in many places fertilizer was applied too late or in too large amounts causing plants to remain in the vegetative growth stage and delaying ripening. This both impaired safe full heading and opened plants to danger of neck-blast of rice, seriously impairing output. This merits attention. However, one cannot positively suppose that fertilizer may in no case be applied after 20 August. In 1978, in view of the high temperatures and lack of rainfall, the Sanjiacao Brigade in Qingfu County made a general application of fertilizer for the booting stage, and on a small number of plots, fertilizer was applied for the opening of anthers. As a result, large areas of the late rice crop produced

increased yields. In 1980, moreover, faced with a threat of freeze damage, this brigade applied booting fertilizer and anther-opening fertilizer to most of its late rice crop, again obtaining a rather good harvest. Quite obviously, late applications of fertilizer to the late rice crop must be done with full understanding of the growth situation of the rice, increased yields being obtainable only through suitable applications made on the basis of meteorological forecasts for the booting, heading, and in-the-milk stages.

9432
CSO: 4007/2

ZHEJIANG

BRIEFS

TAIZHOU PREFECTURE ECONOMIC DIVERSIFICATION--Taizhou Prefecture, Zhejiang has developed a diversified economy. From January through August this year, the total value of agricultural and sideline products procured in the prefecture reached 170 million yuan, an increase of 79 percent over that before the 3d plenary session of the 11th Party Central Committee. Since May 1980, the prefecture has been building 10 commodity-producing bases, including a cash crops base, timber forest base, livestock base, fruits base, economic forest base, special forest products base, fish culture base, export products base, vegetable base and salt base. [Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 4 Oct 81 OW]

AGRICULTURAL PRODUCTION--The peasants in Ningbo Prefecture, Zhejiang Province, reaped a bumper harvest of early rice this year. The total output of early rice was 170 million jin more than that of 1980. The peasants in the prefecture have also promoted diversified farming operation and now the value of agricultural production in the prefecture. [Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 2 Oct 81 OW]

CSO: 4007/10

AUTHOR: WANG Huiying [3769 1920 5391]
HUANG Junde [7806 0193 1795]

ORG: None

TITLE: "Relationship Between the Yield of Cotton and Irrigation-Drainage"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 5 Aug 81 pp 11-13

ABSTRACT: In large acreage production, the yield of ginned cotton is closely related to the amount of rainfall during the growth season. Based upon an analysis of data of the 17 years since 1964, the unit yield decreases with the increase of rainfall during the period of May-Sep, with a correlation coefficient of r = -0.5068 (N = 15 t = 2.277 P0.05 = 2.131). In years of rainfall less than 700 mm during that period, the unit yield was always above 100 jin/mu. When the soil moisture content is contrary to the water needs of the cotton during its various growth and development stages, changes will occur to the plant as an adjustment to the adverse environment, and these changes will affect the ultimate yield. Irrigation and drainage measures must, therefore, be adopted to prevent such changes in the cotton plant. Studies on the rate of transpiration of cotton during various stages of growth and on the effects of irrigation and drainage measures on the yield are reported. Finally, indices and requirements for irrigation and drainage of the cotton fields are described.

AUTHOR: WANG Juming [3769 5418 2494]
SHEN Tianlong [3088 1131 7893]
XIA Qiming [1115 0366 2494]

ORG: All of Plant Protection Center, Shanghai Municipal Academy of Agricultural Sciences

TITLE: "Relationship of Temperature and Developmental Phenomenon of Various Stages of Growth of Brown Leafhopper Feeding on Rice"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 5 Aug 81 pp 14-17

ABSTRACT: Since the large scale occurrence of brown leafhopper feeding on rice in 1968, many studies on the growth and development stages of this pest have been carried out. In 1976-79, the authors made a systematic observation under the condition of a range of temperature from 16 to 30°C. The relationship between the temperature and the early and peak stage of ovulation, between the temperature and the duration of ovulation, between the temperature and the duration of the nymph stage, between the temperature and the life span of the female, and between the temperature and the damage to field crops by the pest are analyzed. The optimal temperature for the growth of the pest during these stages is determined. A great temperature differential between day and night appears to be favorable for the nymph, but the range of the differential and its effect on the quantity of eggs laid by the female are still not clarified.

AUTHOR: LIU Dejun [0491 1795 6874]

ORG: Plant Protection Center, Shanghai Municipal Academy of Agricultural Sciences

TITLE: "Observation of Life Habits of Corn Borer in Cotton Field"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 5 Aug 81 pp 20-22

ABSTRACT: Although corn borer is the major pest of corn, its damage to cotton is increasingly severe in the region of Shanghai. In recent years to cause as much as 20 percent of yield reduction in some fields. In 1975-79, the author and colleagues carried out a preliminary study on the incidence and life habits of corn borers in cotton fields. Indoor breeding began at the peak of hatching of every generation of the pest in the field, to observe the duration of life phenomena of every generation. In the suburbs of Shanghai, it was observed, there occur 3-4 generations in a year. The first injures mainly spring corn and some early planted cotton. The second injures stems of cotton and some green bolls and female spike of corn. The third and fourth injure mainly green bolls of cotton. Mature larvae overwinter on corn and cotton stalks, in cotton warehouses, etc. Pupae begin to appear in early May next. Judging from the data of 11 years of moth-baiting with black light conducted at the center, emergence of the first generation is about 35 days, with 38 days for each subsequent generation. There is basically no overlapping between the first and second. From then on, the temperature rises, and the duration of each generation is shortened to about 30 days and overlapping occurs but not very serious. There is a relatively detailed description of life habits of the various generations.

AUTHOR: None

ORG: Trace Elements Group, Center of Soil and Fertilizer, Shanghai Municipal Academy of Agricultural Sciences

TITLE: "A Preliminary Discussion of the Prospect of Trace Element Application in Agriculture in Shanghai Suburbs"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 5 Aug 81 pp 23-24, 6

ABSTRACT: To date, it is known that plants and animals need such trace elements as boron, manganese, molybdenum, zinc, copper, iron, etc. and these needs cannot be substituted by nitrogen, phosphorus, and potassium. Following a brief review of the condition of research and application of trace elements here and abroad, the paper provides the Zn, B, Mo, Cu, Co, and Mn contents of Shanghai soils and data of a 1978-80 experiment to study the effects of applying B, Zn, Mn, and Mo fertilizers to several soils of Shanghai suburbs, respectively.

[illegible]248
CSO: 4009/17

AUTHOR: None

ORG: Xianning District Seed Company

TITLE: "Summarization of Quality Certification of Original Seeds of Guangluai No 4"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 8, Aug 81 pp 1-3

ABSTRACT: When a superior breed has been extended for large acreage production, factors such as the environment, machines, artificial mixing, natural hybridization, etc. will have their effects and degeneration will occur. It is therefore necessary to purify and invigorate continuously. Using the F_1 original seeds produced in the fields of the District Seed Farm as the control, seeds produced by 17 district and county seed farms are examined over small areas of 0.02 mu each, and repeated 3 times. The experimental plots have good quality soil and even fertility and the management is of a relatively high level. Field observations and indoor examinations demonstrate that the average stalk height is 72.4 cm, the spike measures 17cm in length, each spike has a total of 66.7 grains, and the fruiting rate is 83.6 percent. The grain test weight is 25.25 g. Of these standards, the length of spike and number of grains per spike are slightly too low. The purity of the seeds of Tongshan County Seed Farm is lower, averaging 94.80 percent and those of Yangxin County 95.40 percent; both slightly lower than the original seed standard. Seeds of the remaining 15 farms are all rated at above 99.86 percent pure.

AUTHOR: GAO Yongtong [7559 3057 0681]
SHAO Shengcai [6730 0524 2088]

ORG: Both of Jingzhou District Research Institute of Agricultural Sciences

TITLE: "Selective Breeding of 'Third Line' Inbred-Incompatible Strains of Cabbage-Type Rape"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 8, Aug 81 pp 8-13

ABSTRACT: Experimental data of various regions in China indicate that continuous directional inbred separation of hybrid offsprings of cabbage type and white type rape species is an effective way of quickly breeding out stable inbred incompatible line. This technique is faster and more effective than direct separation of ordinary breeds. Four experiments in the 3 years of 1978-80 carried out by the authors have demonstrated that the inbred incompatibility characteristic of the cabbage type rape can be stably and reliably maintained by using the corresponding inbred line of regular breed as the sterile-free line. The debudding procedure may thus be basically eliminated and hybrid rape may be more conveniently applied in production.

6248
CSO: 4009/16

Meteorology

AUTHOR: ZHOU Mingsheng [0719 7686 4141]

ORG: Tianjin Meteorological Observatory

TITLE: "Analysis of Long-range Weather Process of Summer Drought and Flood in the Hai River Basin"

SOURCE: Beijing QIXIANG XUEBAO [ACTA METEOROLOGICA SINICA] in Chinese No 3, Aug 81 pp 321-331

TEXT OF ENGLISH ABSTRACT: Based on the monthly 500 mb mean charts during 1951-1976, we have analyzed the characteristics of general circulation on summer drought and flood occasions in the Hai River Basin. There were obvious different characteristics between droughts and floods. Types of drought and flood may be summarized by the zonal index. These types and some indexes relating the long-range forecast of drought and flood are given.

It was verified that the types of drought and flood are feasible, and those indexes of the long-range forecast are useful through the inspection in 1977-1979.

AUTHOR: ZHANG Jijia [4545 1015 0857]
SUN Zhaobo [1327 3564 3258]
CHEN Songjun [7115 2646 6511]

ORG: All of Nanjing Institute of Meteorology

TITLE: "The Time-space Structure of the Relation between the 5-Day Mean Circulation at the 500-mb Level and the 5-Day Mean Surface Air Temperature"

SOURCEL Beijing QIXIANG XUEBAO [ACTA METEOROLOGICA SINICA] in Chinese No 3, Aug 81 pp 332-340

TEXT OF ENGLISH ABSTRACT: The time coefficients of the first 5 EOF's terms are obtained from analysis of the 5-day mean circulation at the 500-mb level over Asia for the period of 1964-1973. By using the cross-spectral analysis method, the features of the relation in the frequency region between the 5-day mean circulation at the 500-mb level and the 5-day mean surface air temperature in China are studied. In addition, the main frequency bands in which the coherence function is significant statistically are found. On this basis the paper goes further into the time-space structure showing these relations. The results may provide new fundamentals and a new method for researching long-range weather processes and forecasting the five-day mean surface air temperature with the circulation factors.

AUTHOR: WANG Futang [3769 7450 2768]

ORG: Academy of Meteorological Science, Central Meteorological Service

TITLE: "On the Periodicity of Accumulated Temperature"

SOURCE: Beijing QIXIANG XUEBAO [ACTA METEOROLOGICA SINICA] in Chinese No 3, Aug 81 pp 341-348

TEXT OF ENGLISH ABSTRACT: Periodic fluctuation of agrometeorological thermal factors is investigated by using methods of spectrum analysis and periodogram. Analyses on the medium to short periods of active and accumulated daily mean temperature above 10°C and their duration in Shanghai, Qingdao and Tianjin show that period lengths of about seven to eight and two to three years are prominent, especially that of eight years. The periodic fluctuation of effective accumulated temperature is more stable.

AUTHOR: WANG Duo [3076 6995]

ORG: Anji Meteorological Station, Zhejiang Province

TITLE: "Long-range Weather Analyses of the Change of Food Yield over Tai Hu Plain"

SOURCE: Beijing QIXIANG XUEBAO [ACTA METEOROLOGICA SINICA] in Chinese No 3, Aug 81 pp 349-360

TEXT OF ENGLISH ABSTRACT: In this paper, the climatic background of high or low yields in the food production over the Tai Hu Plain is analyzed on the basis of yield and meteorological data of the period 1960-1979. Both relational types of the high yield/less rainfall years and low yield/more rainfall years are indicated. In addition, the 500 mb circulation patterns of both relational types are analyzed comparatively. The middle-high latitude area in North America-Greenland can be treated as a key area of circulation evolution. It is possible to show the difference of circulation patterns of high or low years using the west wind index of this area. Finally, the relationship between the food yield in the region and the yearly monsoon change over Eastern Asia is discussed.

9717
CSO: 4009/14

END

END OF FICHE

DATE FILMED

19 Nov. 1981